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APPLICANT:	Bähren et al.	**GROUP:**	Unknown
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FOR: SYSTEM AND METHOD FOR INTER-NETWORK COMMUNICATIONS (As Amended; formerly "METHOD FOR COMMUNICATING BETWEEN TWO NETWORKS, AND THE NETWORK")
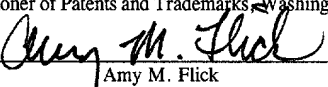
FIRST PRELIMINARY AMENDMENT

Entry of this preliminary amendment is respectfully requested to eliminate multiple dependent claims, and to amend the specification.

Table of Contents:

Preliminary to calculation of the filing fee, please amend the above-identified application as follows:

I hereby certify that this Preliminary Amendment (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231, Attn: Application Division.

Amy M. Flick

9-26-2001

Date

Marked-up copy of the specification
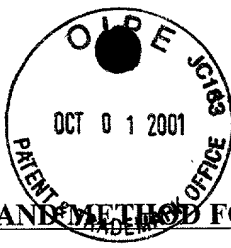
SYSTEM AND METHOD FOR INTER-NETWORK COMMUNICATIONS

~~Description~~

~~A Method for Communicating Between Two Networks, and the Network~~

BACKGROUND OF THE INVENTION

The present invention relates generally to networks and, more particularly, to a ~~method for~~ communicating between ~~a first~~ multiple networks. ~~network, which links several units to one another, and a second network.~~

~~The invention further relates to a network which links several units with one another.~~

The implementation of a local network in a motor vehicle is well known. One conventional approach to a local network in a vehicle is disclosed in German Patent Specification DE 195 03 213 C1. Such motor ~~Motor~~ vehicles can include, ~~equipped with the most modern state-of-the-art,~~ for example, passenger cars, trucks, ~~or~~ buses and other types of vehicles. ~~, are equipped with a multimedia system which is constructed e.g. of a so-called ring MOST network, which links several units with one another. These function as data sources, data sinks, or transceivers, as needed. MOST is an abbreviation for Media Oriented System Transport or Media Oriented Synchronous Transfer.~~

Commonly, the implemented network is the commercially-available Media Oriented System Transport or Media Oriented Synchronous Transfer (MOST). Such MOST networks are generally implemented to facilitate communications between equipment of a multimedia system. The multimedia equipment includes data sources such as, for example, a car radio, CD player, video recorder, TV tuner, etc., as well as data sinks such as, for

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example, an audio amplifier to which several loudspeakers are connected, or a display screen which displays an uncompressed video signal. For example, a ~~an~~ MOST network in a motor vehicle can ~~link with one another~~ communicably couple a radio, ~~a~~ television receiver, monitors, ~~a~~ CD player, ~~a~~ DVD or CD changer, ~~a~~ cassette recorder, active loudspeakers, ~~a~~ navigation system, ~~a~~ car telephone, ~~a~~ wireless telephone, as well as operating and control units, to cite only a few examples of these units.

It is ~~further~~ also known that the network layers of a second network can be installed in each personal computer of a network. Network layers include, for example, ~~are e.g.~~ the Transmission Control Protocol ~~(with the customary abbreviation~~ TCP) and the Internet Protocol (IP) ~~, with the customary abbreviation IP~~. ~~The second network is the Internet.~~ Due to its high technical complexity, a second network such as the Internet ~~with such a structure~~ is not suited for installation in a motor vehicle, because only limited space and power are available in a motor vehicle.

Therefore, is ~~It is therefore the object of the invention to design~~ a system and method for communicating ~~method for communication~~ between a first and a second network ~~, and also a network,~~ such that the first network is suitable for installation in a motor vehicle ~~because it is technically not so complicated~~.

SUMMARY OF THE INVENTION

Briefly, according to an aspect of the present invention, a network includes a plurality of network units and a communication path communicably linking the plurality of network units with each another. A first network unit of the plurality of network units has installed therein a network layer of a second network in combination with an associated application program interface (API). Also, a proxy computer is installed in each of the

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plurality of network units other than the first network unit.

In another aspect of the invention, a network for providing the capability to communicate over the Internet is disclosed. The network includes a plurality of network units communicably linked by a communication path. The plurality of network units includes a first network unit capable of transmitting and receiving external communications and having installed therein a network layer of the Internet in combination with an associated application program interface. The plurality of network units also includes a plurality of network units each having installed therein a proxy computer.

In yet another aspect of the invention, a vehicle-hosted multimedia system for providing the capability to communicate over the Internet is disclosed. The system includes a plurality of network units and a communication path for communicably linking network units with each another. The network units include a telephone configured as a network unit capable of transmitting and receiving external communications and having installed therein a Transmission Control Protocol (TCP) or Internet Protocol (IP) network layer of the Internet in combination with an associated application program interface. The network units also include several remaining network units each having installed therein a proxy computer.

These and other objects, features and advantages of the present invention will become more apparent in light of the following detailed description of preferred embodiments thereof, as illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram of a local network suitable for implementation in a motor vehicle including one network unit thereof configured to communicate with a second network.

DETAILED DESCRIPTION OF THE INVENTION

The present invention is directed to a network that includes a plurality of network units and a communication path communicably linking the plurality of network units with each another. A first network unit of the plurality of network units has installed therein a network layer of a second network in combination with an associated application program interface. Also, a proxy computer is installed in each of the plurality of network units other than the first network unit.

Figure 1 is a schematic diagram of one embodiment of the network of the present invention. In this illustrative embodiment, a network 100 includes several units 101 to 110 communicably coupled by a communication path 111. In accordance with an aspect of the present invention, one particular network unit 101 ~~In terms of method, this object is achieved with the characteristics of Claim 1, in that~~ has installed therein at least one ~~the~~ network layers 113 of ~~the~~ a second network ~~(I)~~ 112. In one embodiment of the invention, the first network 100 is a Media Oriented System Transport (MOST) network implemented in, for example, a motor vehicle, and the second network 112 is the Internet, although the present invention can be used in conjunction with any other network.

In the illustrative embodiment, the network layer 113 is an Internet Protocol (IP) network layer, although in other embodiments other network layers of the second network

112 can be installed in unit 101. For example, in an alternative embodiment, the network layer 113 is a Transmission Control Protocol network layer. Also installed in the network unit 101 is ~~as well as~~ an associated application program interface (~~a so-called~~ API). Together, the network layer 113 and API 114 enable network units 101-110 in first network 100 to communicate with the second network 112 ~~are centrally implemented in one of the units of the first network for the remaining units,~~. Preferably, network unit 101 is a telephone in which are installed the network layers 113 of the Internet 112 and the API 114. A telephone is best suited for this function because it represents a transmission and reception unit for external communication.

A ~~while~~ well-known ~~so-called~~ proxy computers 115 ~~are~~ is installed in the remaining units 102-110 of first network 100. It is advantageous to install the proxy computers 115 in the form of software in the hardware platform provided by the units 102-110 because such an approach requires no additional hardware complication.

~~In terms of apparatus, this object is achieved by the characteristics of Claim 2, in that the network layers of a second network as well as an associated application interface, a so-called API, are centrally present in one of the units for the remaining units, while a so-called proxy computer is present for each of the remaining units.~~

The inventive measure of installing the network layer(s) 113 of the second network 112 and an API 114 only in one of the units 101 of the first network 100, while installing the technically uncomplicated proxy computers 115 in the remaining units 102-110, substantially reduces technical complexity without thereby impairing communication with the second network 112.

~~A first embodiment of the invention specifies as the first network an MOST network in a motor vehicle and, as the second network, the Internet.~~

In a second embodiment of the invention, the MOST network is equipped with a telephone in which are installed the network layers of the Internet and the API. The telephone of the MOST network is best suited for this function, because it represents a transmission and reception unit for external communication.

A proxy computer is installed in each of the other units of the MOST network.

The figure shows an MOST network with several units 1 to 10 as well as the Internet I. The network layers IP and the application interface API are installed in unit 1, e.g. a telephone, while a proxy computer P is installed in the remaining units 2 to 10.

It is especially advantageous to install the proxy computers in the form of software in the hardware which is present in any case, because this requires no additional hardware complication.

While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. For example, it should be understood that the present invention is not limited to application in an MOST network, but can be implemented in any network. The inventive method and the inventive network are especially well suited for us in a motor vehicle.

Although the present invention has been shown and described with respect to several preferred embodiments thereof, various changes, omissions and additions to the form and detail thereof, may be made therein, without departing from the spirit and scope of the invention.

What is claimed is:The inventive method and the inventive network are not limited to application in an MOST network, but can be implemented in any network. Because the inventive method and the inventive network are technically not so complicated, they are especially well suited for installation in a motor vehicle.

List of Reference Symbols

API   API

IP   Internet protocol

I   Internet

M   MOST network

P   Proxy computer

1   Telephone

2-10   Unit

~~Abstract of the Disclosure~~

ABSTRACT

A network that provides a simple mechanism for communicating between the network, such as a MOST network installed in a motor vehicle, and a second network, such as the Internet. One unit of the network includes a network layer of the second network as well as an associated application interface (API). The network layer is an Internet Protocol (IP) or Transmission Control Protocol (TCP) network layer. Also installed in the network unit is an associated application program interface. Together, the network layer and API enable the network units in first network to communicate with the second network. Proxy computers are installed in the remaining units to substantially reduce technical complexity without impairing communication with the second network.

~~To reduce the complexity of communicating between a first network (M), which links several units (1 to 10) with one another, e.g. an MOST network installed in a motor vehicle, and a second network (I), e.g. the Internet, the network layers (IP) of the second network (I) as well as an associated application interface (API), a so-called API, are centrally implemented in one of the units (1) of the first network (M) for the remaining units (2 to 10), while so-called proxy computers (P) are installed in the remaining units (2 to 10).~~

~~Figure~~